

## **IN THE CLAIMS:**

Please cancel claims 2, 3, 5, 32 and 33 without prejudice or disclaimer.

Please amend the claims as follows:

1. (Currently Amended) An impact driver for driving elongate objects into a body, said impact driver comprising

a. a) a chassis

b. b) a ram supported by said chassis in a manner allowing rectilinear movement of said ram relative to said chassis ~~between two limits,~~

c. c) a linear induction motor ~~having~~ including a stator mounted to said chassis, and a linear induction motor reaction member mounted to said ram, wherein the stator is and positioned to operatively interact with the a linear induction motor reaction means member to accelerate the reaction member in a reciprocating fashion between a retracted position and an impact position and whereby, when the reaction member is accelerated from said retracted condition to said impact position, the ram is accelerated by the reaction member to cause an impact force to be imparted on said elongate object in the elongate direction thereof being of a conductive metal material, said reaction means carried by said ram in a manner to allow the ram to oscillate between said two limits by the stator of said linear induction motor, a first limit being a retracted position and a second limit being an impact position to which the ram is

~~accelerated from said retracted condition by said stator and at which said ram imparts an impact force on said elongate object in the elongate direction thereof.~~

2-3. (Cancelled)

4. (Currently Amended) The impact driver as claimed in claim 1 wherein said impact head is of a robust and substantially solid material suitable for the transferral of an impact from the ram to the elongate member.

5. (Cancelled)

6. (Previously Presented) The impact driver as claimed in claim 1 wherein said reaction means comprises at least one plate of a conductive metal material.

7. (Previously Presented) The impact driver as claimed in claim 1 wherein said ram bears with said chassis in a manner to allow rectilinear movement of said ram relative to said chassis.

8. (Currently Amended) The impact driver as claimed in claim 1 wherein said chassis provides bearings ~~ram bearing means~~ which locate and support said ram for linear movement within ~~with~~ said chassis.

9. (Currently Amended) The impact driver as claimed in claim 8 wherein said bearings ~~are ram bearing means~~ is located within a casing of said chassis, said ram also at least in part provided and retained by said ~~bearing means~~ bearings within said casing of said chassis.

10. (Previously Presented) The impact driver as claimed in claim 8 wherein said stator of said linear induction motor is positioned within the casing of said chassis.

11. (Previously Presented) The impact driver as claimed in claim 1 wherein said chassis includes a casing defining an elongate chamber within which at least part of said ram is able to move in the elongate direction.

12. (Previously Presented) The impact driver as claimed in claim 1 wherein the relative position of said ram at least when in one position with respect to said chassis is able to be sensed by an electronic sensor.

13. (Previously Presented) The impact driver as claimed in claim 12 wherein a said electronic sensor is a limit sensor detecting the reaching of the ram to or proximate to its retracted position.

14. (Currently Amended) The impact driver as claimed in claim 12 wherein a said electronic sensor is in communication with a controller ~~control means~~ for controlling of the linear induction motor, in order for the electronic sensor to actuate ~~trigger~~ the control means to accelerate the hammer from the retracted position to the impact position.

15. (Previously Presented) The impact driver as claimed in claim 1 wherein said stator is controlled to accelerate the ram from the retracted position to the impact position at a rate greater than from the impact position to the retracted position.

16. (Currently Amended) The impact driver as claimed in claim 1 wherein ~~a~~ an anvil assembly is positioned relative to said chassis to hold an anvil in alignment to the rectilinear direction of movement of said ram to be interposed between the head of said elongate object and said impact head for the purpose of providing a cushioning to the impact force of said ram applied to said elongate object.

17. (Previously Presented) The impact driver as claimed in claim 16 wherein said anvil assembly is in a translatable engagement with said chassis.

18. (Previously Presented) The impact driver as claimed in claim 16 wherein said anvil assembly presents said anvil at a location remote from said chassis.

19. (Currently Amended) The impact driver as claimed in ~~claim~~ claim 1 wherein said chassis is mounted to a support structure.

20. (Previously Presented) The impact driver as claimed in claim 16 wherein said chassis is mounted to a support structure and said anvil assembly is in a translatable engagement with said support structure to permit its movement relative thereto and parallel to the rectilinear direction of movement.

21. (Previously Presented) The impact driver as claimed in claim 1 wherein said chassis is mounted to a support structure.

22. (Currently Amended) The impact driver as claimed in claim 21 wherein said support structure includes a mounting means arrangement to mount for mounting the chassis to a vehicle.

23. (Currently Amended) The impact driver as claimed in claim 22 wherein said ~~means mounting arrangement to mount for mounting~~ allows said support structure to rotate relative to said vehicle.

24. (Currently Amended) The impact driver as claimed in claim 22 wherein said ~~means mounting arrangement to mount for mounting~~ allows said support structure to translate relative to said vehicle.

25. (Previously Presented) The impact driver as claimed in claim 1 wherein said chassis is mounted to a support device selected from one of a vehicle, a vessel and a derrick.

26. (Currently Amended) The impact driver as claimed in claim 25 wherein said chassis is connected to the support device by an ~~articulatable~~ articulated mounting

arrangement means configured for mounting the chassis to the support device in an articulated manner ~~connection means.~~

27. (Previously Presented) The impact driver as claimed in claim 1 wherein the impact driver is a pile driver.

28. (Previously Presented) The impact driver as claimed in claim 1 wherein the overall operational height of the impact driver remains less than 3m.

29. (Previously Presented) The impact driver as claimed in claim 1 wherein the overall operational height of the impact driver remains less than 2.5m.

30. (Previously Presented) The impact driver as claimed in claim 1 wherein the overall operational height of the impact driver remains less than 2.0m.

31. (Previously Presented) The impact driver as claimed in claim 1 wherein the overall operational height of the impact driver remains less than 1.5m.

32-33. (Cancelled)

34. (Previously Presented) The method of driving elongate objects into a body utilising the impact driver as claimed in claim 1.

35. (Previously Presented) The method of pile driving utilising the impact driver as claimed in claim 1.

36. (Currently Amended) A method of driving elongate objects into a body, said method comprising utilising gravity to accelerate an impact ram to impact the head of an elongate and a linear induction motor stator interacting with a reactor plate of said ram, to enhance acceleration of the ram beyond  $9.81 \text{ m/s}^2$  during its compression stroke.

37. (Currently Amended) A driver for driving elongate objects into a body, said driver including comprising a ram which is accelerated by assistance of gravity and by a linear induction motor stator interacting with a reactor plate of said ram to enhance acceleration of the ram beyond  $9.81 \text{ m/s}^2$  during its compression stroke.



38. (Currently Amended) An elongate object extraction device for extracting elongate objects which are embedded in a body, from the ~~from~~ body, said device including comprising

a) a ram ~~which relies on power from~~ driven by a linear induction motor ~~stator~~ to accelerate the ram in an extraction stroke to extract the elongate object when the ram is moved in a direction away from the elongate object during its extracting stroke;

b) said ram including an engaging arrangement ~~means to for engage~~ engaging with said elongate object to transmit forces from the linear induction motor to the elongate object, thereby to extract the elongate object; and wherein

c) the movement of the ram is controllable though the linear induction motor to reduce the ram's impact on the elongate object to a lesser extent when the ram returns to a more proximate position to the elongate object between extraction strokes. ~~subject it to a force from the ram during its extraction stroke.~~

39. (Currently Amended) An elongate object extraction device for extracting elongate objects from a body, said device comprising

a. a) a chassis

b. ~~b)~~ a ram supported by said chassis in a manner allowing rectilinear movement of said ~~hammer~~ ram relative to said chassis ~~between two limits,~~

~~c. c)~~ a linear induction motor ~~having~~ including a stator mounted to said chassis, and a linear induction motor reaction member of a conductive metal material, wherein the stator is ~~and~~ positioned to operatively interact with a the linear induction motor reaction ~~means~~ member ~~being of a conductive metal material,~~ and said reaction member ~~means~~ is carried by said ram in a manner to allow the ram to be accelerated ~~by the~~ ~~to oscillate between said two limits by the~~ stator of said linear induction motor ~~between,~~ a first limit being a first position more proximate to said an elongate object ~~proximate more position and a second limit tending towards~~ an extraction position which is less proximate the elongate member than the to which the ram is accelerated from said proximate more position by said stator and at which said elongate object is or tends towards being extracted from said object.

Please add new claims 40-44 as follows:

40. (New) An impact driver for driving elongate objects into a body, said impact driver comprising

a) a chassis

b) a ram supported by said chassis in a manner allowing rectilinear movement of said ram relative to said chassis between two limits,

c) a ram driver assembly for driving the ram to cause an impact on an elongate object, said ram driver assembly including

i) a linear induction motor having

ii) a stator mounted to said chassis, and

iii) a linear induction motor reaction member mounted to the ram,

iv) wherein the stator is positioned to operatively interact with the reaction member to drive it in a linear manner, and wherein

v) said reaction member is mounted to said ram in a manner to allow the ram to be driven by operation of the linear induction motor to oscillate between a retracted position, and an impact position at which said ram causes an impact force to be imparted on said elongate object in the elongate direction thereof.

41. (New) An impact driver suitable for driving elongate objects into a body or extracting elongate objects from a body, said impact driver comprising

a) a chassis

b) a ram supported by said chassis in a manner allowing rectilinear movement of said ram relative to said chassis in two opposed directions,

c) a ram driver assembly capable of accelerating and/or decelerating the ram in both of the two directions, said ram driver assembly including

i) a linear induction motor having

ii) a stator mounted to said chassis, and

iii) a reaction member coupled to the ram,

iv) wherein the stator is positioned to operatively interact with the reaction member to effect a controlled electromagnetic force on the reaction member, thereby to drive the ram to impact on said elongate member in a controlled fashion.

42. (New) The impact driver as claimed in claim 1 wherein said ram includes an impact head for transmitting an impact force from the ram receiving an impact force from the ram and transmitting it to an elongate member.

43. (New) The impact driver as claimed in claim 42 wherein said ram includes an elongate ram support structure, said ram support structure having a first and second

ends, and wherein said impact head is provided at a first end of said ram support structure.

44. (New) An impact driver as claimed in claim 42 wherein said reaction member is of an elongate configuration, and is secured to the ram support structure to extend in the elongate direction of said ram support structure between said first and second ends thereof.